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SEQUENCE LISTING

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<120> HYDROXYLASES AND MODULATORS THEREOF

<130> 06843-0091

<140> 10/531,662  
<141> 2005-10-21

<150> PCT/GB2003/004492  
<151> 2003-10-16

<150> GB 0224102.4  
<151> 2002-10-16

<150> GB 0226598.1  
<151> 2002-11-14

<160> 25

<170> PatentIn Ver. 3.3

<210> 1  
<211> 14  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic Peptide

<400> 1  
Asp Glu Ser Gly Leu Pro Gln Leu Thr Ser Tyr Asp Cys Glu  
1 5 10

<210> 2  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic Peptide

<400> 2  
Pro Gln Leu Thr Ser Tyr Asp Cys Glu  
1 5

<210> 3  
<211> 17  
<212> PRT  
<213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic Peptide

<220>  
 <221> misc\_feature  
 <222> (16)  
 <223> any naturally occurring amino acid except Asp

<400> 3  
 Asp Glu Ser Gly Leu Pro Gln Leu Thr Ser Tyr Asp Cys Glu Val Xaa  
     1                    5                    10                    15

Ala

<210> 4  
 <211> 58  
 <212> PRT  
 <213> Homo sapiens

<400> 4  
 Phe Asn Trp Asn Trp Ile Asn Lys Gln Gln Gly Lys Arg Gly Trp Gly  
     1                    5                    10                    15

Gln Leu Thr Ser Asn Leu Leu Leu Ile Gly Met Glu Gly Asn Val Thr  
                     20                    25                    30

Pro Ala His Tyr Asp Glu Gln Gln Asn Phe Phe Ala Gln Ile Lys Gly  
                     35                    40                    45

Tyr Lys Arg Cys Ile Leu Phe Pro Pro Asp  
     50                    55

<210> 5  
 <211> 62  
 <212> PRT  
 <213> Drosophila melanogaster

<220>  
 <221> MOD\_RES  
 <222> (17)..(20)  
 <223> Variable Amino Acid

<400> 5  
 Glu Leu Ala Ala Asp Leu Arg Val Ser Asp Leu Asp Phe Ala Gln Gln  
     1                    5                    10                    15

Xaa Xaa Xaa Xaa Pro Pro Asp Ala Val Asn Phe Trp Leu Gly Asp Glu  
                     20                    25                    30

Arg Ala Val Thr Ser Met His Lys Asp Pro Tyr Glu Asn Val Tyr Cys  
                     35                    40                    45

Val Ile Ser Gly His Lys Asp Phe Val Leu Ile Pro Pro His  
     50                    55                    60

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<210> 6
<211> 62
<212> PRT
<213> Drosophila melanogaster
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<220>
<221> MOD_RES
<222> (15)..(19)
<223> Variable Amino Acid
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<400> 6
Ala Leu Lys Glu Asp Ile Ser Ile Pro Asp Tyr Cys Thr Ile Xaa Xaa
  1                               10                          15

Xaa Xaa Xaa Pro Gly Ala Val Asp Ile Lys Ala Trp Leu Gly Pro Ala
  20                          25                          30

Gly Thr Val Ser Pro Met His Tyr Asp Pro Lys His Asn Leu Leu Cys
  35                          40                          45

Gln Val Phe Gly Ser Lys Arg Ile Ile Leu Ala Ala Pro Ala
  50                          55                          60

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<210> 7
<211> 65
<212> PRT
<213> Homo sapiens
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<220>  
<221> MOD_RES  
<222> (18)..(21)  
<223> Variable Amino Acid
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<400> 7
Lys Ile Val Arg Lys Leu Ser Trp Val Glu Asn Leu Trp Pro Glu Glu
 1          5          10          15

Cys Xaa Xaa Xaa Xaa Pro Asn Val Gln Lys Tyr Cys Leu Met Ser Val
 20          25          30

Arg Asp Ser Tyr Thr Asp Phe His Ile Asp Phe Gly Gly Thr Ser Val
 35          40          45

Trp Tyr His Val Leu Lys Gly Glu Lys Ile Phe Tyr Leu Ile Arg Pro
 50          55          60

Thr
 65

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<210> 8
<211> 80
<212> PRT
<213> Caenorhabditis elegans
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<220>  
 <221> MOD\_RES  
 <222> (17)..(36)  
 <223> Variable Amino Acid

<400> 8  
 Arg Phe Val Gln Glu Ile Ser Met Val Asn Arg Leu Trp Pro Asp Val  
     1                    5                    10                    15  
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
                     20                    25                    30  
 Xaa Xaa Xaa Xaa Pro Lys Val Glu Gln Phe Cys Leu Ala Gly Met Ala  
                     35                    40                    45  
 Gly Ser Tyr Thr Asp Phe His Val Asp Phe Gly Gly Ser Ser Val Tyr  
     50                    55                    60  
 Tyr His Ile Leu Lys Gly Glu Lys Ile Phe Tyr Ile Ala Ala Pro Thr  
     65                    70                    75                    80

<210> 9  
 <211> 71  
 <212> PRT  
 <213> Caenorhabditis elegans

<220>  
 <221> MOD\_RES  
 <222> (17)..(27)  
 <223> Variable Amino Acid

<400> 9  
 Arg Phe Val Gln Asp Ile Ser Met Ala Lys Arg Leu Trp Ser Asp Val  
     1                    5                    10                    15  
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Pro Lys Ile Glu Gln  
                     20                    25                    30  
 Ile Cys Ala Ala Ala Met Ala Asn Ser Tyr Thr Asp Phe His Val Asp  
                     35                    40                    45  
 Phe Gly Gly Thr Ser Val Tyr Phe His Val Phe Lys Gly Glu Lys Ile  
     50                    55                    60  
 Phe Tyr Ile Ala Ala Pro Thr  
     65                    70

<210> 10  
 <211> 77  
 <212> PRT  
 <213> Drosophila melanogaster

<220>  
 <221> MOD\_RES  
 <222> (17)..(33)  
 <223> Variable Amino Acid

&lt;400&gt; 10

Glu Ile Val Arg Gln Ile Asp Trp Val Asp Val Val Trp Pro Lys Gln  
 1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 20 25 30

Xaa Pro Lys Val Gln Lys Tyr Cys Leu Met Ser Val Lys Asn Cys Tyr  
 35 40 45

Thr Asp Phe His Ile Asp Phe Gly Gly Thr Ser Val Trp Tyr His Ile  
 50 55 60

Leu Arg Gly Ser Lys Val Phe Trp Leu Ile Pro Pro Thr  
 65 70 75

&lt;210&gt; 11

&lt;211&gt; 73

&lt;212&gt; PRT

<213> *Saccharomyces cerevisiae*

&lt;220&gt;

&lt;221&gt; MOD\_RES

&lt;222&gt; (19)..(29)

&lt;223&gt; Variable Amino Acid

&lt;400&gt; 11

Gln Asn Asp Leu Val Asp Lys Ile Trp Ser Phe Asn Gly His Leu Glu  
 1 5 10 15

Lys Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Pro Lys Val  
 20 25 30

Thr Lys Tyr Ile Leu Met Ser Val Lys Asp Ala Tyr Thr Asp Phe His  
 35 40 45

Leu Asp Phe Ala Gly Thr Ser Val Tyr Tyr Asn Val Ile Ser Gly Gln  
 50 55 60

Lys Lys Phe Leu Leu Phe Pro Pro Thr  
 65 70

&lt;210&gt; 12

&lt;211&gt; 61

&lt;212&gt; PRT

<213> *Rattus norvegicus*

&lt;400&gt; 12

Lys Thr Asp Val Phe Gln Glu Val Met Trp Ser Asp Phe Gly Phe Pro  
 1 5 10 15

Gly Arg Asn Gly Gln Glu Ser Thr Leu Trp Ile Gly Ser Leu Gly Ala  
 20 25 30

His Thr Pro Cys His Leu Asp Ser Tyr Gly Cys Asn Leu Val Phe Gln  
 35 40 45

Val Gln Gly Arg Lys Arg Trp His Leu Phe Pro Pro Glu  
 50 55 60

<210> 13  
 <211> 57  
 <212> PRT  
 <213> *Caenorhabditis elegans*

<400> 13  
 Phe Glu Asp Asp Leu Phe His Tyr Ala Asp Asp Lys Lys Arg Pro Pro  
 1 5 10 15  
 His Arg Trp Phe Val Met Gly Pro Ala Arg Ser Gly Thr Ala Ile His  
 20 25 30  
 Ile Asp Pro Leu Gly Thr Ser Ala Trp Asn Ser Leu Leu Gln Gly His  
 35 40 45  
 Lys Arg Trp Val Leu Ile Pro Pro Ile  
 50 55

<210> 14  
 <211> 60  
 <212> PRT  
 <213> *Drosophila melanogaster*

<400> 14  
 Thr Ile Leu Asp Tyr Val Asn Lys Asp Tyr Asn Ile Gln Ile Asp Gly  
 1 5 10 15  
 Val Asn Thr Ala Tyr Leu Tyr Phe Gly Met Trp Lys Thr Thr Phe Ala  
 20 25 30  
 Trp His Thr Glu Asp Met Asp Leu Tyr Ser Ile Asn Tyr Leu His Phe  
 35 40 45  
 Gly Ala Pro Lys Thr Trp Tyr Val Val Pro Pro Glu  
 50 55 60

<210> 15  
 <211> 60  
 <212> PRT  
 <213> *Homo sapiens*

<400> 15  
 Thr Val Leu Asp Val Val Glu Glu Glu Cys Gly Ile Ser Ile Glu Gly  
 1 5 10 15  
 Val Asn Thr Pro Tyr Leu Tyr Phe Gly Met Trp Lys Thr Thr Phe Ala  
 20 25 30  
 Trp His Thr Glu Asp Met Asp Leu Tyr Ser Ile Asn Tyr Leu His Phe  
 35 40 45

Gly Glu Pro Arg Ser Trp Tyr Ala Ile Pro Pro Glu  
 50 55 60

<210> 16  
 <211> 56  
 <212> PRT  
 <213> *Caenorhabditis elegans*

<400> 16  
 Thr Ile Leu Glu Asp Thr Asn Tyr Glu Ile Lys Gly Val Asn Thr Val  
 1 5 10 15

Tyr Leu Tyr Phe Gly Met Tyr Lys Thr Thr Phe Pro Trp His Ala Glu  
 20 25 30

Asp Met Asp Leu Tyr Ser Ile Asn Phe Leu His Phe Gly Ala Pro Lys  
 35 40 45

Tyr Trp Phe Ala Ile Ser Ser Glu  
 50 55

<210> 17  
 <211> 60  
 <212> PRT  
 <213> *Drosophila melanogaster*

<400> 17  
 Thr Ile Leu Asn Leu Val Asn Thr Asp Tyr Asn Ile Ile Ile Asp Gly  
 1 5 10 15

Val Asn Thr Ala Tyr Leu Tyr Phe Gly Met Trp Lys Ser Ser Phe Ala  
 20 25 30

Trp His Thr Glu Asp Met Asp Leu Tyr Ser Ile Asn Tyr Leu His Phe  
 35 40 45

Gly Ala Pro Lys Thr Trp Tyr Ala Ile Pro Pro Ala  
 50 55 60

<210> 18  
 <211> 60  
 <212> PRT  
 <213> *Homo sapiens*

<400> 18  
 Thr Ile Leu Asp Leu Val Glu Lys Glu Ser Gly Ile Thr Ile Glu Gly  
 1 5 10 15

Val Asn Thr Pro Tyr Leu Tyr Phe Gly Met Trp Lys Thr Ser Phe Ala  
 20 25 30

Trp His Thr Glu Asp Met Asp Leu Tyr Ser Ile Asn Tyr Leu His Phe  
 35 40 45

Gly Glu Pro Lys Ser Trp Tyr Ser Val Pro Pro Glu  
 50 55 60

<210> 19  
 <211> 58  
 <212> PRT  
 <213> *Drosophila melanogaster*

<400> 19  
 Phe Ala Ser Asp Trp Leu Asn Glu Gln Leu Ile Gln Gln Gly Lys Asp  
   1                  5                  10                  15  
 Asp Tyr Arg Phe Val Tyr Met Gly Pro Lys Asn Ser Trp Thr Ser Tyr  
                   20                  25                  30  
 His Ala Asp Val Phe Gly Ser Phe Ser Trp Ser Thr Asn Ile Val Gly  
                   35                  40                  45  
 Leu Lys Lys Trp Leu Ile Met Pro Pro Gly  
           50                  55

<210> 20  
 <211> 58  
 <212> PRT  
 <213> *Schizosaccharomyces pombe*

<400> 20  
 Phe Ala Asp Asp Trp Leu Asn Ala Tyr Val Ile Asp Cys Glu Ser Asp  
   1                  5                  10                  15  
 Asp Phe Arg Phe Ala Tyr Leu Gly Ser His Leu Thr Thr Thr Gly Leu  
                   20                  25                  30  
 His Thr Asp Val Tyr Ala Ser His Ser Phe Ser Val Asn Leu Cys Gly  
                   35                  40                  45  
 Val Lys Cys Trp Leu Phe Ile Asp Pro Lys  
           50                  55

<210> 21  
 <211> 349  
 <212> PRT  
 <213> *Homo sapiens*

<400> 21  
 Met Ala Ala Thr Ala Ala Glu Ala Val Ala Ser Gly Ser Gly Glu Pro  
   1                  5                  10                  15  
 Arg Glu Glu Ala Gly Ala Leu Gly Pro Ala Trp Asp Glu Ser Gln Leu  
                   20                  25                  30  
 Arg Ser Tyr Ser Phe Pro Thr Arg Pro Ile Pro Arg Leu Ser Gln Ser  
                   35                  40                  45  
 Asp Pro Arg Ala Glu Glu Leu Ile Glu Asn Glu Glu Pro Val Val Leu  
           50                  55                  60

Thr Asp Thr Asn Leu Val Tyr Pro Ala Leu Lys Trp Asp Leu Glu Tyr  
 65 70 75 80  
 Leu Gln Glu Asn Ile Gly Asn Gly Asp Phe Ser Val Tyr Ser Ala Ser  
 85 90 95  
 Thr His Lys Phe Leu Tyr Tyr Asp Glu Lys Lys Met Ala Asn Phe Gln  
 100 105 110  
 Asn Phe Lys Pro Arg Ser Asn Arg Glu Glu Met Lys Phe His Glu Phe  
 115 120 125  
 Val Glu Lys Leu Gln Asp Ile Gln Gln Arg Gly Gly Glu Glu Arg Leu  
 130 135 140  
 Tyr Leu Gln Gln Thr Leu Asn Asp Thr Val Gly Arg Lys Ile Val Met  
 145 150 155 160  
 Asp Phe Leu Gly Phe Asn Trp Asn Trp Ile Asn Lys Gln Gln Gly Lys  
 165 170 175  
 Arg Gly Trp Gly Gln Leu Thr Ser Asn Leu Leu Leu Ile Gly Met Glu  
 180 185 190  
 Gly Asn Val Thr Pro Ala His Tyr Asp Glu Gln Gln Asn Phe Phe Ala  
 195 200 205  
 Gln Ile Lys Gly Tyr Lys Arg Cys Ile Leu Phe Pro Pro Asp Gln Phe  
 210 215 220  
 Glu Cys Leu Tyr Pro Tyr Pro Val His His Pro Cys Asp Arg Gln Ser  
 225 230 235 240  
 Gln Val Asp Phe Asp Asn Pro Asp Tyr Glu Arg Phe Pro Asn Phe Gln  
 245 250 255  
 Asn Val Val Gly Tyr Glu Thr Val Val Gly Pro Gly Asp Val Leu Tyr  
 260 265 270  
 Ile Pro Met Tyr Trp Trp His His Ile Glu Ser Leu Leu Asn Gly Gly  
 275 280 285  
 Ile Thr Ile Thr Val Asn Phe Trp Tyr Lys Gly Ala Pro Thr Pro Lys  
 290 295 300  
 Arg Ile Glu Tyr Pro Leu Lys Ala His Gln Lys Val Ala Ile Met Arg  
 305 310 315 320  
 Asn Ile Glu Lys Met Leu Gly Glu Ala Leu Gly Asn Pro Gln Glu Val  
 325 330 335  
 Gly Pro Leu Leu Asn Thr Met Ile Lys Gly Arg Tyr Asn  
 340 345

&lt;210&gt; 22

&lt;211&gt; 41

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 22

Ser Met Asp Glu Ser Gly Leu Pro Gln Leu Thr Ser Tyr Asp Cys Glu  
 1 5 10 15

Val Asn Ala Pro Ile Gln Gly Ser Arg Asn Leu Leu Gln Gly Glu Glu  
 20 25 30

Leu Leu Arg Ala Leu Asp Gln Val Asn  
 35 40

&lt;210&gt; 23

&lt;211&gt; 52

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 23

Pro Ser Asp Leu Ala Cys Arg Leu Leu Gly Gln Ser Met Asp Glu Ser  
 1 5 10 15

Gly Leu Pro Gln Leu Thr Ser Tyr Asp Cys Glu Val Asn Ala Pro Ile  
 20 25 30

Gln Gly Ser Arg Asn Leu Leu Gln Gly Glu Glu Leu Leu Arg Ala Leu  
 35 40 45

Asp Gln Val Asn  
 50

&lt;210&gt; 24

&lt;211&gt; 12

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 24

Leu Thr Ser Tyr Asp Cys Glu Val Asn Ala Pro Ile  
 1 5 10

&lt;210&gt; 25

&lt;211&gt; 12

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 25

Leu Leu Gln Gly Glu Glu Leu Leu Arg Ala Leu Asp  
 1 5 10